

Utility Solid Waste Activities Group  
c/o Edison Electric Institute  
701 Pennsylvania Avenue, NW  
Washington, DC 20004-2696  
202-508-5645  
www.uswag.org

USWAG

September 25, 2005

Mr. Stephen E. Calopedis  
U.S. Department of Energy  
Energy Information Administration  
EI-81  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585

By email: [stephen.calopedis@eia.doe.gov](mailto:stephen.calopedis@eia.doe.gov)

Re: Federal Register Vol. 71, No. 144, Pages 42637-42639, Revised Form EIA-1605,  
“Voluntary Reporting of Greenhouse Gases” and instructions (July 27, 2006)

Dear Mr. Calopedis:

On behalf of the Utility Solid Waste Activities Group (USWAG) and a subset of USWAG members and other utilities referred to as “C2P2 Funders”<sup>1</sup>, I respectfully submit these comments on the Department of Energy, Energy Information Administration’s Revised Form EIA-1605, “Voluntary Reporting of Greenhouse Gases” and instructions (71 Fed. Reg. 42637 July 27, 2006).

Sincerely,



Jim Roewer  
Executive Director  
Utility Solid Waste Activities Group

<sup>1</sup> C2P2 Funders are Alliant Energy, Ameren Corporation, American Electric Power, Cinergy, Constellation Energy Group, Consumers Energy, First Energy, AES-IPALCO, LG&E Energy Corporation, Mirant Corporation, MontanaDakota Utilities Company, Progress Energy, Public Service New Hampshire, Public Service Enterprise Group, Reliant Energy, Southern Company, Tri-State Generation and Transmission, TVA, and Xcel Energy.

**COMMENTS OF THE  
UTILITY SOLID WASTE ACTIVITIES GROUP**

**on the**

**U.S. DEPARTMENT OF ENERGY, ENERGY INFORMATION ADMINISTRATION'S  
REVISED FORM EIA-1605, "VOLUNTARY REPORTING OF GREENHOUSE GASES"  
AND INSTRUCTIONS**

**FEDERAL REGISTER, July 27, 2006  
VOL. 71, NO. 144  
PAGES: 42637-42639**

**Submitted by:  
Jim Roewer  
Executive Director  
Utility Solid Waste Activities Group  
701 Pennsylvania Ave., N.W.  
Washington, D.C. 20004  
202/508-5645  
[jim.roewer@uswag.org](mailto:jim.roewer@uswag.org)**

**September 25, 2005**

## Introduction

The Utility Solid Waste Activities Group (USWAG) respectfully submits these comments on the Energy Information Administration's revised Form EIA-1605, "Voluntary Reporting of Greenhouse Gases" and instructions, as presented in 71 Fed. Reg. 42637-42639, (July 27, 2006).

USWAG was formed in 1978, and is an informal consortium of approximately 80 utility operating companies, the Edison Electric Institute (EEI), the National Rural Electric Cooperative Association (NRECA), the American Public Power Association (APPA), and the American Gas Association (AGA). EEI is the principal national association of investor-owned electric power and light companies. NRECA is the national association of rural electric cooperatives. APPA is the national association of publicly owned electric utilities. AGA is the national association of natural gas utilities. Together, USWAG member companies and trade associations represent more than 85% of the total electric generating capacity of the U.S. and service more than 95% of the nation's consumers of electricity, and over 93% of the nation's consumers of natural gas.

USWAG is responsible for addressing solid and hazardous waste issues on behalf of the utility industry. USWAG's Mission is to address the regulation of utility wastes, byproducts and materials in a manner that protects human health and the environment and is consistent with the business needs of its members.

USWAG, as the key representative of utilities, is working in partnership with the U.S. Environmental Protection Agency, the American Coal Ash Association (ACAA), and other government and private sector organizations to establish a series of coordinated efforts aimed at diverting coal combustion products (CCPs) from land disposal and reducing greenhouse gas emissions by increasing beneficial use of CCPs. The Coal Combustion Products Partnership (C2P2) is one of the new actions established under the Power Partners<sup>SM</sup> initiative.

It is well known that use of CCPs to displace Portland cement avoids substantial CO<sub>2</sub> emissions, both from the energy savings and from the limestone calcination avoided. Other beneficial uses of CCPs have also been shown to save energy and reduce GHG emissions. The C2P2 efforts aim to increase the utilization of coal combustion products and thereby reduce CO<sub>2</sub> emissions to support President Bush's approach to addressing greenhouse gases.

Since the beginning of the §1605(b) reporting system, GHG reductions from beneficial use of CCPs have been prominent among efforts reported. Given the substantial GHG benefits of CCP use and the GHG intensity goals expressed in the President's Global Climate Change Initiative, USWAG has urged the continued recognition of CCP use within the §1605(b) Voluntary Reporting of Greenhouse Gases Program.

## Summary of USWAG Comments

USWAG's comments are focused on Addendum A12 of the draft Form EIA-1605, ("Recycling of Fly Ash", at pages A39 to A41), together with the associated instructions at pages 86-87. As noted in the instructions, Addendum A12 is to be completed "when using the action specific method for calculating emission reductions associated with recycling of fly ash as described in 2.4.5.6.7 of the Technical Guidelines pursuant to Section 300.8(h)(5) of the General Guidelines."

The action specific method for the recycling of fly ash is a recent addition to the guidelines. Whereas the March 24, 2005 draft guidelines would have specifically excluded *any* use of coal combustion products (CCPs) for registered GHG reductions, the final guidelines allow for one specific use – fly ash used as a cement replacement in concrete.

DOE's final guidelines refer only to fly ash used as a substitute for Portland cement *in concrete*, rather than fly ash used for *any* substitution of Portland cement. This CCP use category covers less than a third of CCP use by tonnage, but over three-fourths of the CO<sub>2</sub> tonnage avoided. As a result, fly ash use that displaces cement in flowable fill mixtures and other uses may not be eligible for registration. Also, it appears as though the concrete manufacturers would be the primary reporting entities, and that electric power generators could only report these reductions as offsets (provided agreements existed with the concrete manufacturers).

It is not clear that DOE intended for these limitations in CCP reporting. It is possible that DOE assumed that the cement and concrete industries were nearly completely overlapping. If so, then other cement uses may not have been considered, and the concrete manufacturers were assumed to be the ones avoiding GHG emissions. However, as discussed below, the markets for CCPs are broader, and the GHG reductions occur when the CCPs are sold as a cement replacement.

The draft Form EIA-1605 and associated instructions appear to reasonably reflect DOE's final guidelines for the recycling of fly ash. However, we believe that DOE's guidelines themselves contain errors concerning the range of the qualifying activity and the rightful "ownership" of the reductions. We have made these concerns known to DOE in a June 16, 2006 letter to Mr. Mark Friedrichs in DOE's Office of Policy and International Affairs, and repeat the salient points below.

DOE has indicated that it is planning to issue a set of Technical Corrections to the Guidelines later this year. We have requested that DOE correct these errors concerning fly ash characterization as part of those technical corrections. Assuming they do so, EIA will also need to make minor changes to the draft Form EIA-1605.

## **The Need for DOE to Make Technical Corrections**

On April 17, 2006, DOE released the final revised guidelines for the Voluntary Reporting of Greenhouse Gases (§1605b) Program. A notice containing the General Guidelines, and DOE's response to the latest round of public comments, was published in the *Federal Register* on April 21, 2006. Of particular interest here is DOE's addition of "recycling of fly ash" in section 2.4.5.6.7 (pages 291-292 of Technical Guidelines), one of the very few additions made to the approved list of action-specific methods.

### ***Revised §1605(b) Treatment of CCPs***

In brief, the provisions of section 2.4.5.6.7 in §1605(b) would allow the action-specific reporting of emission reductions from the use of fly ash as a substitute for Portland cement *in concrete*. Fly ash substitution for Portland cement in other non-concrete uses, such as flowable fill, do not appear to be covered.

Additionally, the primary reporting authority for the emission reductions appears to reside with the concrete manufacturers who use the fly ash; they could report the resulting indirect emission reductions using the action-specific method. In contrast, electric generators could only report these emission reductions as offsets, provided a valid agreement existed with the concrete manufacturer.

In reporting the emission reductions, a factor of 1.00 metric tons CO<sub>2</sub> can be used for each metric ton of fly ash used in concrete. For a given reporting year, the tons of emission reductions are compared to the tons of reductions in the base year (averaged, if necessary), with the increase in recycling above the base year average being reportable.

### ***Concerns with the §1605(b) Fly Ash Provisions***

Greenhouse gases are avoided when fly ash substitutes for cement. Whether that cement would have been used in making concrete or some other product is generally not relevant to the GHG saving. By

limiting the reporting to only Portland cement that would have been used in concrete, the §1605(b) Guidelines ignore other equally valid uses of fly ash substituting for Portland cement. Additionally, the Guidelines' concrete-centered focus vests the primary reporting responsibility with the concrete manufacturer, when the emissions avoidance actually occurred when the electric generator sold the fly ash as a cement replacement instead of landfilling or other end-uses.

The Guidelines' limitation only to concrete uses may be traceable to an EPA document cited in DOE's Technical Guidelines. The Technical Guidelines for this section cite as source an EPA document titled *Background Document for Life-cycle Greenhouse Gas Emission Factors for Fly Ash Used as a Cement Replacement in Concrete* (U.S. Environmental Protection Agency, EPA530-R-03-016, November 7, 2003, at [http://yosemite.epa.gov/OAR/globalwarming.nsf/uniqueKeyLookup/BMOE5T2RBS/\\$file/Fly%20Ash%2011\\_07.pdf?OpenElement](http://yosemite.epa.gov/OAR/globalwarming.nsf/uniqueKeyLookup/BMOE5T2RBS/$file/Fly%20Ash%2011_07.pdf?OpenElement)).

The EPA Background Document talks about waste management options for fly ash, and mentions (in its title and the text) fly ash's use as a cement replacement for concrete. However, EPA's life-cycle analysis focuses on the energy use and GHG emissions associated with the production of virgin cement, and the concrete plant is involved only to establish a transportation distance between the cement plant and concrete plant. Since the same transportation distance (60 miles) is assumed for both virgin cement and fly ash, EPA's analysis is essentially an analysis of cement displacement in general, rather than limited only to the specific end-use of concrete production.

DOE also cites as a source the spreadsheet version of EPA's Waste Reduction Model (WARM), available on-line at <http://yosemite.epa.gov/OAR/globalwarming.nsf/WARM?openform>. In this spreadsheet, the user describes each material in terms of tons generated, tons recycled (or composted), tons landfilled, and tons combusted. By comparing the baseline scenario to the alternative scenario, and specifying assumptions regarding landfill characteristics and waste transport, the WARM model calculates the GHG difference between the Reference Case and Alternative Management scenarios.

In the WARM model – both the Excel spreadsheet version and the on-line form – “fly ash” is listed as a material without qualification as to end-use. It does not specify its applicability only for cement replacement in concrete. It would seem to be equally applicable to any cement displacement, not just cement that would be used in concrete.

### ***Possible Implications for §1605(b) Fly Ash Reporting***

DOE, by limiting §1605(b) reporting to that subset of fly ash uses where fly ash substitutes for Portland cement in concrete, has created two issues of concern, discussed below:

#### **1. Other cement substitution may not be eligible for registration, unless specifically used in concrete manufacturing.**

Not all cement is used in producing concrete. According to the U.S. Geological Survey, in their Mineral Commodity Summaries report *Cement 2006* (at <http://minerals.usgs.gov/minerals/pubs/commodity/cement/cemenmcs06.pdf>), almost 93 million tons of Portland cement and about 5 million tons of masonry cement were produced in the U.S. in 2005. About 75% of cement sales went to ready-mixed concrete producers, 14% to concrete product manufacturers, 6% to contractors (mainly road paving), 3% to building materials dealers, and 2% to other users.

Similarly, not all fly ash that displaces Portland cement is sold to concrete manufacturers. Most fly ash sales that displace cement are to the “Concrete/Concrete Products/Grout” category, defined in the ACAA survey methodology to include coal combustion products (CCPs) used in the making of concrete for construction or for manufacturing products and in the making of grouts. (Prior to the 2002 survey, this category was titled “cement, concrete, & grout.”) This category usually denotes supplies to the Ready-Mix concrete industry, where CCPs substitute for cement.

However, other fly ash uses also displace cement, particularly flowable fill where a one-for-one substitution is typical. Other fly ash use categories also displace cement, although typically in lower proportions.

**2. The concrete manufacturers using the fly ash are the ones permitted to report the indirect emission reductions. The electric generators that produce the fly ash could report the indirect reductions only as an offset.**

In DOE's framework, the concrete manufacturers using the fly ash are the ones permitted to report the indirect emission reductions. The electric generators that produce the fly ash would be allowed to report the indirect reductions as an offset, provided that an agreement existed with the concrete manufacturer and the other requirements of §300.7(d) of the General Guidelines (pp. 118-119) were met.

Having the "ownership" of the reductions reside with the concrete manufacturer seems to be a puzzling choice, in that the concrete manufacturer neither created the fly ash nor the cement which produced the GHGs to be avoided. Possibly, DOE was concerned with the certification aspects of reporting, and wanted to ensure that with multiple uses for the fly ash, only some of which displaced cement, the actual end-use of the fly ash could best be certified by those creating that end-use. To the extent this is a concern, concrete manufacturers could be in a better position to certify the cement displacement than the seller of the fly ash.

Absent this certification concern, it would seem that having the *producer* of the coal ash as the owner of the GHG reductions (unless transferred by agreement) is more consistent with DOE's general approach for determining the entity responsible for emission reductions. In §300.8(k) of the General Guidelines (pp. 127-128), DOE states that "The entity that EIA will presume to be responsible for emission reduction, avoided emission or sequestered carbon is the entity with financial control of the facility, land or vehicle which generated the reported emissions, generated the energy that was sold so as to avoid other emissions, or was the place where the sequestration action occurred." As this concept is applied to "green power" producers (page 294, section 2.4.6 of Technical Guidelines), it is the energy generator that is potentially eligible for reporting emissions reductions. Similarly, for coal ash and other CCPs, the producer of the coal ash is the first "owner" of any potential reductions. The GHG reduction occurs when the power generator sells that fly ash into the marketplace and displaces virgin cement production, rather than simply landfilling the fly ash.

DOE's certification concern also seems to reflect the idea that fly ash is a "standard" commodity, and that once the power generator sells that fly ash into the marketplace, he doesn't really know how it will ultimately be used, whether to displace cement or some other less CO<sub>2</sub>-intensive use. If so, then DOE may have an incomplete understanding of fly ash properties and marketability. All fly ash is not alike, and high-value markets are not simply "there" for whatever ash is produced. In order to attain high value for the fly ash, many power generators will take particular efforts to maintain uniformity in coal supply and coal quality, so that the resulting fly ash likewise shows little quality variation. These efforts may also entail capital and operating decisions for emissions control, such as avoiding potential problems with unburned carbon and/or ammonia in the product.

Because of the need to maintain fly ash quality and consistency, the electric power generators selling the fly ash will typically have an excellent understanding not only of their product, but also of their customers' needs and intended uses. As part of their §1605(b) registration of these reductions, they should be able to document their sales as to customer and end use, specifically those end uses where cement is displaced. As necessary, this documentation could also include certification from the buyers of the fly ash affirming the displacement of cement.

## **Suggested Technical Corrections for §1605(b) Fly Ash Reporting**

When we provided this information to DOE in our June 16<sup>th</sup> letter, USWAG requested that the following technical corrections be made to the Guidelines:

1. Change references of fly ash “as a substitute for Portland cement in concrete” to fly ash “as a substitute for Portland cement.”
2. Clarify that the GHG avoidance occurs when the seller of the fly ash (typically the electric generator) sells the fly ash for cement displacement instead of landfilling or other end-uses. The concrete manufacturers should be allowed to report these indirect reductions as offsets as described in §300.7(d) of the General Guidelines.

Assuming that DOE makes these technical corrections to the Guidelines, there will be a commensurate need to adjust EIA’s reporting form EIA-1605 accordingly. We suggest the following modifications to draft Form EIA-1605, with corresponding modifications to the Instructions:

1. Page A39, Part A, Line 1. Change the instruction “Enter Name and Location of Concrete Manufacturing Facilities Where Fly Ash Was Recycled” to read “Enter Name and Location of Facilities or Operations to which Fly Ash was Sold as a Replacement for Cement”.
2. On the table accompanying Page A39, Part A, Line 1, add a fifth column labeled “Type of Cement Use Displaced”. In the instructions, the choices for this item can be described as “used in ready-mix concrete”, “used in on-site concrete manufacturing”, “used in flowable fill applications”, and “other cement-displacing activities”.
3. Page A39, Part B, Line 1. Change the instruction “Enter Total Quantity of Fly Ash Used in Concrete for Base Period and Reporting Year” to read “Enter Total Quantity of Fly Ash Used in Cement-displacing Activities for Base Period and Reporting Year”
4. Page A40, Part B, Line 2. On the table, change both references of “Using Fly Ash in Concrete” to “Using Fly Ash to Displace Cement”.

We appreciate this opportunity to comment. Should DOE make the Technical Corrections as discussed above, we would be pleased to clarify any of our comments in order to assist EIA in their implementation.